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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,410	11/07/2001	Rudolf Jung	1276	4333

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EXAMINER

BAUM, STUART F

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 06/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,410	JUNG ET AL.	
	Examiner	Art Unit	
	Stuart F. Baum	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-79 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-5, 7-16, and 18-20 drawn to an isolated nucleic acid, expression cassette, transformed plant, transformed plant cell and method for improving the quality of a cereal grain, classified in class 800, subclass 290 for example.

For the election to be complete, Applicant is to elect one corresponding pair of sequences from the list below:

SEQ ID NO:1 and 2; SEQ ID NO:3 and 4; SEQ ID NO:5 and 6

- II. Claims 21-22, drawn to a genetically modified maize plant comprising a mutated endogenous coding region, classified in class 800, subclass 291 for example.

- III. Claim 23, drawn to an isolated polypeptide, classified in class 530, subclass 370 for example.

For the election to be complete, Applicant is to elect one sequence from the list below:

SEQ ID NO:2; SEQ ID NO:4; SEQ ID NO:6

- IV. Claims 24-36, drawn to a method for improving the quality of a cereal grain comprising decreasing the level of a seed protein by transposon tagging, classified in class 800, subclass 291 for example.

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- V. Claim 37, drawn to a method for improving the quality of a cereal grain comprising any method for decreasing the level of a nucleotide sequence encoding specified seed protein, including T-DNA mediated mutagenesis, classified in class 800, subclass 294 for example.
- VI. Claims 38-42, drawn to a method for improving the quality of a cereal grain comprising co-suppression or antisense, classified in class 800, subclass 285 for example.
- VII. Claims 43-54, drawn to a method for increasing the nutritional value of a cereal grain by reducing the level of at least one seed protein in a cereal grain, classified in class 435, subclass 69.1 for example.

For the election to be complete, Applicant is to elect one sequence from the list below:

18kD delta-zein; hordothionin-12; a polypeptide whose amino acid sequence is at least 30% combined methionine and cysteine.

- VIII. Claims 55-56, drawn to a method of screening for a particular phenotypic trait, classified in class 435, subclass 7.1 for example.
- IX. Claims 57-58 and 60-61, drawn to a method for increasing the hardness of corn grain comprising transforming a plant with SEQ ID NO:1, classified in class 800, subclass 290 for example.

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- X. Claims 57 and 59, drawn to a method for increasing the hardness of corn grain comprising transforming a plant with SEQ ID NO:1 and hordothionin-12, classified in class 800, subclass 290 for example.
- XI. Claims 62-68, drawn to a method for improving the quality of corn grain, classified in class 800, subclass 278 for example.
- XII. Claims 69-70, drawn to a method for decreasing the caloric value of a cereal grain by decreasing the level of a particular seed protein using transposon tagging technology, classified in class 800, subclass 291 for example.
- XIII. Claims 71-74, drawn to a method for decreasing the caloric value of a cereal grain by co-suppression or antisense technology, classified in class 800, subclass 286 for example.
- XIV. Claims 75-78, drawn to a method for decreasing the caloric value of a cereal grain by over-expression of an endogenous plant coding region, classified in class 800, subclass 278 for example.

For the election to be complete, Applicant is to elect one sequence from the list below:

SEQ ID NO:1;

16kD gamma-zein;

27kD gamma-zein.

- XV. Claim 79, drawn to an isolated nucleic acid molecule, classified in class 536, subclass 23.1 for example.

For the election to be complete, Applicant is to elect one sequence from the list below:

**SEQ ID NO:7; SEQ ID NO:8; SEQ ID NO:9;
SEQ ID NO:10**

- XVI. Claims 1, 6, 10-12, and 17-19, drawn to an isolated nucleic acid molecule comprising an antisense nucleotide sequence and transformed plant, classified in class 536, subclass 24.5 for example.

For the election to be complete, Applicant is to elect sequence from the list below:

SEQ ID NO:1; SEQ ID NO:3; SEQ ID NO:5

2. **If Applicant elects any of Groups II, IV, V, or VI, Applicant is also to elect one sequence from the list below:**

**50kD gamma-zein of SEQ ID NO:1; 16kD gamma-zein;
15kD beta-zein; 27kD gamma-zein.**

3. **If Applicant elects any of Groups XI, XII, or XIII, Applicant is also to elect one sequence from the list below:**

SEQ ID NO:3; SEQ ID NO:5.

4. Claims 1, 10-12, 18-19, and 57 will be examined to the extent that they read on the elected invention.

5. Inventions I, II, III, XV, and XVI are unrelated to each other, as are Inventions IV through XIV. Applicant is reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another, as are different proteins structurally distinct chemical compounds and unrelated to one another. Therefore, the claimed sequences are thus deemed to normally constitute **independent and distinct** inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, each such sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.141 et seq (see MPEP 803.04 and 2434). This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of a single genus of invention, but constitutes an independent and patentably distinct invention.

6. Inventions I-XVI are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are distinct because the starting materials, methods steps and end products are distinct and unrelated to each other. Examples of divergent method steps and starting materials are transposons and transposon tagging methods, antisense RNA constructs, sense suppression constructs, T-DNA mutating constructs, methods for evaluating increases in protein production,

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methods for evaluating decreases in gene expression, methods for evaluating changes in seed hardness, methods for evaluating changes in the accumulation of particular amino acids, methods for overexpressing endogenous genes, methods for determining grain quality, and methods for determining caloric value.

7. Furthermore, the proteins of Invention III could be made by a process other than the expression of the nucleic acid sequence of Inventions I, such as chemical synthesis or purification from the natural source, and the DNA of Invention I may be used for a process other than the production of a protein, such as a nucleic acid hybridization. Lastly, DNA and protein differ in composition, structure and function.

8. Because these inventions are distinct for the reasons given above, have acquired a separate status in the art as shown by their different classification, and the literature and sequence searches required for each of the Groups are not required for another of the Groups, restriction for examination purposes as indicated is proper.

9. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

10. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

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application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stuart Baum whose telephone number is (703) 305-6997. The examiner can normally be reached on Monday-Friday 8:30AM – 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (703) 306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 or (703) 305-3014 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, who may be contacted at 308-0196.

Stuart F. Baum Ph.D.

May 30, 2003

DAVID T. FOX
PRIMARY EXAMINER
GROUP 180 1638

